

Investigating the Feasibility, Design, and Cost of Creating A Multimodal Transportation Partnership in California's San Joaquin Valley

Phase 1 Response to DTRS56-05-BAA-0001, DOT Center for Climate Change and Environmental Forecasting - Transportation and Climate Change Research

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A 501(c) 3 non-profit organization

Topic Area of the proposal: Institutional Capacity Building

Financial:

General estimate of costs: \$180,000

Potential cost share: We anticipate that matching funds and in-kind will exceed \$325,000 (staff, facilities, related research, and other contributions from the research team); \$150,000 authorized by the California Department of Transportation District 6 for Highway 99 Task Force and Highway 99 Interstate discussions; participation by the 19 member Federal Interagency Task Force for the Economic Development of the San Joaquin Valley; involved State Agencies; eight Councils of Governments and six MPO's (not all Valley COGs have MPO status); and other interested entities.

Timeline: June 1, 2005 to May 31, 2006

NOTE: because of the urgency of conditions in the San Joaquin Valley, the team is prepared to start immediately.

Project Description:

The San Joaquin Valley, southern watershed of California's Great Central Valley, is a large, diverse, and complex area that contains millions of acres of the world's most fertile farmland, a wealth of natural resources, large urban environments, and isolated rural communities. The San Joaquin Valley Air Basin has a complex policy infrastructure: 8 counties (Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare), 6 federally designated Metropolitan Planning Organizations (MPOs), 2 Rural Transportation Planning Agencies (RTPA), 8 Councils of Governments, and 2 Caltrans districts. Struggling with unprecedented growth and a corresponding transportation crisis, the region faces unique challenges.

We propose to bring together an exemplary private/public team of researchers to work in cooperation with key State and local entities and the Federal Interagency Task Force for the San Joaquin Valley to create a model unlike any other. We will investigate the feasibility, design, and cost of a new, intermodal transportation planning entity to bring together under one umbrella disparate transportation functions such as rail, freight, transit, roads and highways, airports, ports, and air quality agencies now individually serving eight Valley counties. The primary work will focus on creating a new transportation infrastructure and a supportive, integrated land use process to improve air quality in the entire San Joaquin Valley.

Figure 1. Conditions Threatening the San Joaquin Valley

<p><i>The San Joaquin Valley is a vast area with complex topography requiring coordinated and strategic transportation planning.</i></p> <ul style="list-style-type: none"> • It covers a total area of 27,280 square miles, 17% of the land mass of California. • It is larger in area than 10 states. • The shape is a 250 mile long "bowl" with mountains on 3 sides. • Restricted air exchange in the Valley is due to surrounding mountains and low wind. • It is subject to high summer temperatures and solar radiation that degrade air quality. • Geography easily links air transport of pollution from congested coastal counties.
<p><i>The San Joaquin Valley is the fastest growing region in California, and the transportation systems are not meeting the needs of this exploding population.</i></p> <ul style="list-style-type: none"> • Current population exceeds 3.5 million, 10% of California's population. • Predicted growth is 29% between 2000 and 2010 reaching 8 million residents by 2050. • Quickly growing urban and metropolitan areas have expanding development of whole/retail trade and altered transportation patterns.
<p><i>The San Joaquin Valley has the richest farmland in the world, but its agricultural productivity is threatened by degrading air quality.</i></p> <ul style="list-style-type: none"> • The Valley includes 6 of the top 7 agriculture-producing counties in California. • The region contributes \$30 billion annually to the economy, one-half of state's gross value of agricultural production. • The Valley would be ranked first in the nation in agricultural production if it were a state. • Increasing ozone concentrations could reduce agricultural yield by 10-20% in field and tree crops. • Diminishing agricultural production will hurt the Valley, the state, and the nation.
<p><i>The San Joaquin Valley is unusually susceptible to significant air pollution problems, and its dangerous air quality has dramatic consequences on health.</i></p> <ul style="list-style-type: none"> • The Valley is one of the three most polluted air basins in the United States. • Its bowl-shape collects and holds emissions caused by residents' activities, their two million vehicles, and vehicles from other areas traveling in or through the Valley. • US EPA designated the Valley as "extreme" in air quality classification for ozone 1 hour standard. • 1 in 6 children living in the Valley suffers from asthma. • More than 300,000 people – almost 10% of the Valley's population – are afflicted with chronic breathing disorders. • Air pollution is transported from the San Francisco Bay Area, the Los Angeles basin, and the Sacramento Valley but is mostly Valley-generated. • San Joaquin Valley Air Pollution Control District, the largest air district in the United States in terms of geography, was created in 1992 to develop cooperative and effective air quality programs. • While there are other air districts that contain more than one county, the Valley is the largest non-attainment area in the U.S. in which each county performs individual conformity findings to individual sub-regional emissions budgets.
<p><i>The San Joaquin Valley transportation modal networks are fragmentary, mismatched, and under funded.</i></p> <ul style="list-style-type: none"> • The North/South and East/West multimodal transportation development is inadequate. • Demographic changes, the growth of population base, and increased migration from Los Angeles and the San Francisco Bay Area add burdens to existing roadways. • More than 90 million vehicle miles are traveled each day in the San Joaquin Valley. • More dense development will result in high frequency of traffic congestion as retired farmland is converted into warehousing and transportation nodes between the North and South.

- The Valley's multi-modal infrastructure is complicated: roads, interstate freeways, state highways, airports, a major port, Amtrak, freight trains, and the possibility of high-speed rail.
- Lack of local/state funding for highway and non-highway transportation solutions is problematic.
- Existing highways are operating far above their design maximum capacity.
- There is an over reliance on insufficient highway infrastructure.
- Non-highway resources are underutilized: 9 commercial airports, passenger and freight rail, port.

These apparently intractable conditions may be addressed though leveraging resources to build an innovative and collaborative partnership, benefiting this region directly and developing a model that may apply to other regions across the nation.

The need for greater integration of efforts in this area has already been recognized at the federal level with the formation of the 19 member Federal Interagency Task Force for the Economic Development of the San Joaquin Valley. Officially created by Executive Order of President Clinton in 2000, implemented by President Bush in 2002, and amended and reaffirmed by President Bush in October 2004, this is the only organization of its kind, singled out because of the special circumstances of the Valley. The Task Force benefits from participation by State representation and bi-partisan support of the Valley Congressional delegation (California Districts 11, 18, and 19).

The San Joaquin Valley and surrounding foothill counties were selected by The Tri-Agency Subcommittee on Collaborative Planning (California Business, Transportation, and Housing Agency; California Resources Agency; and California Environmental Protection Agency) for the Inland Central California Region Collaborative Planning Assessment. About to be finalized, the assessment by Common Ground indicates substantial need and desire for more integrated planning that is connected to local efforts.

The Great Valley Center is coordinating the Highway 99 Task Force, a group of approximately 100 regional leaders developing a cohesive approach to transform 280 miles of the Highway 99 corridor into a truly compelling "Main Street of the San Joaquin Valley." The California Department of Transportation (Caltrans) is a major sponsor of this initiative. Caltrans has also announced \$1.2 billion in planned improvements along Highway 99 in the San Joaquin Valley.

The Central California Air Quality Studies is a multi-year effort of meteorological and air quality monitoring, emission inventory development, data analysis, and air quality simulation modeling expected to be completed by 2005. The California Air Resources Board (CARB) and local air pollution control districts plan to use the results to prepare a demonstration of attainment for the ozone standard for non-attainment areas in the San Joaquin Valley.

Research Team and Focus

The Great Valley Center (GVC) is a private, nonpartisan, nonprofit organization founded in 1997 to help communities solve serious economic, social, and environmental problems in the state's fastest growing region. The only non-governmental organization serving the region, GVC produces innovative studies, provides reliable information, and hosts convenings around issues critical to the Valley. It has a history of capacity building and is known for successful facilitation of multi-agency collaborations. Viewed as a key point of contact for Valley information, data, and resources, GVC occupies a unique and important role in the region.

For this project, the Great Valley Center has brought together a unique public/private team of experts from 1) the University of California Davis, home of one of the most distinguished and largest collections of environmental researchers in the world, studying relationships among climate change, air quality, and transportation; 2) Common Ground: Center for Cooperative Solutions focusing on successful solutions for issues and problems in public and private sectors; and 3) the Milken Institute, recognized internationally for research helping business and public policy leaders identify and implement innovative ideas for creating broad-based prosperity.

While the San Joaquin Valley is expressing a strong desire for collaborative planning across counties, agencies, levels of government, and issues, it does not currently have the institutional multi-county capacity to accomplish this goal. (The regulatory air district does not include planning agencies.) It is therefore both fitting and timely to consider a cross-Valley, multi-disciplinary, multi-modal transportation partnership structure, empowered to act as a collaborative entity for the purpose of planning, designing, building, and managing cross-county transportation infrastructure projects and potentially high speed rail. (Such a partnership could give a cumulative impact response to the high speed rail proposals for the whole region.)

National and International Component

The project will study successful examples of infrastructure from this county, such as the New York Port Authority, as a basis for the possible creation of a San Joaquin Valley Transportation Partnership. The research will also assess strengths and weaknesses of international models, as well as their suitability for "import" into the United States and, in particular, California and the Valley. It will compare Latin American and Asian models (which are interregional) with the U.S. approach (which tends to be regional or county-centric). We propose to analyze transportation policies that may have contributed economic benefits to Japan, Brazil, and perhaps Taiwan, inquiring into the feasibility of adoption of similar transportation planning policies in the United States, and in particular, the San Joaquin Valley. We will consider whether they might result in a more efficient, coordinated institutional response to air pollution, transportation congestion, and transportation/economic infrastructure development.

For example, Curitiba, Brazil created a pioneering public transport system that incorporates sustainable considerations of business development, road infrastructure development, and local community development into traffic management, transportation, and land-use planning, maximizing efficiency and productivity. In Japan, the Ministry of Land, Infrastructure and Transport established land use and environment as a primary concern, and included relevant environmental agencies within its organizational structure with other transportation modes (air, water) serving a supporting function. (As the Japan model appears to emphasize urban development, it may be that China's high-speed transit or roadway development models will be more applicable to the rural Valley.)

Policy Implications

The Valley's institutional capacity prevents a unified regional response to transportation planning issues. For temporal and organizational reasons, its transportation infrastructure is fragmented, offering few formalized opportunities for multimodal and multilevel agency collaboration. Both Japan and Brazil developed most of their transportation infrastructure since the 1960s and 1970s, whereas the majority of the United States transportation infrastructure investment is pre-1960,

predating the existence in this country of county-based Councils of Governments (COGs). Valley COGs are county-specific, although transportation and air quality issues are rarely constrained by political boundaries. In contrast to the international models referenced above, the U.S. model too often establishes a confrontational institutional relationship among environmental resource agencies and transportation, business, and housing. Well-intentioned, county-based planning organizations have neither the legal ability to control transport of air pollution from other counties or the financial resources or institutional structure to undertake interregional interagency transportation solutions or mitigation, such as new public transit rail lines, expanded interregional bus lines, or high-speed rail.

The research may show that in the United States, with neither overarching land use agencies nor statewide environmental resource management agencies housed in transportation agencies, the absence of institutional coordination effectively paralyzes state and local transportation agencies from responding to air quality challenges and from proposing transportation solutions. The result is delay in transportation project design and development and worsening air quality. This delay may be short-circuited if Federal, State (California Agencies such as Environmental Protection; Business, Transportation and Housing; and Resources), and local environmental agencies had a collaborative infrastructure which promoted institutional partnerships, rather than adversarial relations, in the planning, design, and engineering phases of transportation projects.

Research Methods/Deliverables/Milestones

a. Conduct detailed interviews with lead agency representatives and interested stakeholders to investigate the barriers and opportunities for a new, multimodal transportation planning partnership.	<i>Quarter 1</i>
b. Facilitate design input meetings by a cross-section of stakeholder agencies to advise on development of effective cross-agency, cross-county, and cross-issue collaboration infrastructure.	<i>Quarter 1-2</i>
c. Establish communication with and begin research on opportunities regarding relevant transportation agencies in this country and with ministries of other countries, such as Japan, China, and Brazil.	<i>Quarter 1-2</i>
d. Articulate options for a feasible interregional transportation planning partnership including land use and environmental agencies, describing pathways for development, use of technical information, and cost forecasts.	<i>Quarters 1-2</i>
e. Research costs of existing inter-institutional arrangements in California and beyond (Sacramento Area COG Blueprint, Merced County AGR TP, San Diego MSHCP) and forecast costs for a potential arrangement.	<i>Quarter 2-3</i>
f. Assess economic needs for an efficient transit system that yields positive externality in aiding regional development and minimizes air and other particulate pollution.	<i>Quarter 2-3</i>
g. Finalize research; prepare findings, review and revise.	<i>Quarter 3</i>
h. Sponsor conference with regional, national, and international government officials and experts in the San Joaquin Valley.	<i>Quarter 4</i>
i. Issue Conference Proceedings.	<i>Quarter 4</i>
j. Publish findings, plan next steps.	<i>Quarter 4</i>

Description of past performance

1. Lead and contributing authors

Carol Whiteside, President, Great Valley Center, an organization she founded in 1997 to promote the economic, social and environmental well-being of California's Central Valley. Whiteside served as the Director of Intergovernmental Affairs for Governor Pete Wilson on issues of land use, finance and restructuring, and economic development and was Assistant Secretary at the California Resources Agency specializing in resource conservation, land use, and growth management issues. She currently serves on a number of Boards including the Public Policy Institute of California, Sierra Health Foundation, Pacific Bell Telecommunications Advisory Panel, California Center for Regional Leadership, California Center for Civic Renewal Santa Barbara, and was on the Board of Advisors for the High Speed Rail Authority in 1999- 2000.

Mike McCoy, Co-Director, Information Center for the Environment, UC Davis serves as Principal Investigator, Co-Principal Investigator, or Academic Administrator for contracts and grants awarded to projects involving the development aggregation and dissemination of environmental information. He works with a variety of agencies, committees and funding sources, synthesizes input and works to achieve consensus on the best strategy for receiving and integrating, and presenting required data; implements the strategy and reports results; responsible for project funding and finance and staff management. His current projects include studies of species distribution, impaired water bodies, land use and infrastructure planning policy, and data aggregation and distribution problems. McCoy is chair of the California Planning Roundtable.

Dan Sperling, Director, Institute of Transportation Studies; Professor of Environmental Science and Policy; Professor of Civil and Environmental Engineering; UC Davis. Research focuses on the use of transportation and energy technologies to achieve societal goals. He manages major research programs on advanced vehicle technologies and fuels, transportation in developing countries, and the development of “new mobility” systems using information and communication technologies.

Susan Handy, Associate Professor, Department of Environmental Science and Policy, UC Davis. Research focuses on the relationships between transportation and land use, including the impact of land use on travel behavior and the impact of transportation investments on land development patterns. Work is directed towards strategies for enhancing accessibility and reducing automobile dependence, including land use policies and telecommunications services. Related interests are the practice of transportation planning and the education of transportation professionals.

Carolyn Penny, J.D., and Co-Director, Common Ground: Center for Cooperative Solutions, UC Davis Extension. Common Ground helps government entities, agencies, private sector organizations, nonprofits, and communities come together and work out solutions to public policy issues including species recovery, land use, water quality, health, education, and transportation. Penny has an extensive background in conflict resolution, issue-framing, meeting design, facilitation of multi-stakeholder decision-making, strategic and organizational planning, mediation, facilitation of public engagement processes, training, and analysis and writing.

Perry Wong, Senior Research Economist in Regional Economics, Milken Institute, Santa Monica, California. Research focus is regional economic development, industry structure and policy. He has an extensive background on regional development in rural region, particularly in technology oriented economic development in regions such as the San Joaquin Valley. He specializes in regional modeling, industry-clustering, and technology development policy. He is an expert on regional economics, development and econometric forecasting and specializes in analyzing the structure, industry mix, development and public policies of a regional economy. Wong is actively involved in projects aimed at increasing access to technology and regional economic development in California and the American Midwest. His work extends to the international arena, where he is involved in regional economic development in southern China, Taiwan, and other parts of Asia.

2. Selected past work on the subject of the proposal

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